

Choosing your Trig Method

In the following triangles, indicate which method you would use to solve for x:

a) Given a 90° Angle:

- Use SIN, COS, or TAN to find a missing side
- Use SIN^{-1} COS^{-1} TAN^{-1} to find a missing angle

b) Given an angle and the side opposite it:

- Use the SINE LAW:

$$\frac{\text{SIN} A}{a} = \frac{\text{SIN} B}{b} = \frac{\text{SIN} C}{c}$$

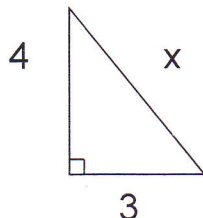
c) Given SAS or SSS:

- Use the COSINE LAW: $a^2 = b^2 + c^2 - 2bc \text{COS} A$

d) Also use the Pythagorean Theorem

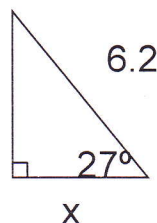
e) Also use the fact that the angles in a triangle add to 180°

(1)



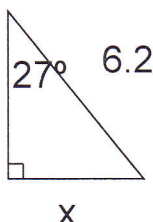
Method: Pythagorean
Formula: $x^2 = 3^2 + 4^2$

(2)



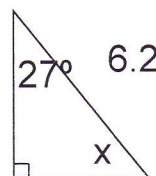
Method: Trig Ratio = CAH
Formula: $\cos 27^\circ = \frac{x}{6.2}$

(3)



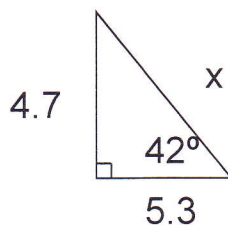
Method: Trig Ratio = SOH
Formula: $\sin 27^\circ = \frac{x}{6.2}$

(4)

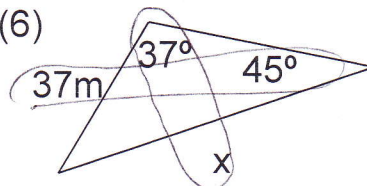


Method: SAT
Formula: $\angle x = 180^\circ - 90^\circ - 27^\circ$

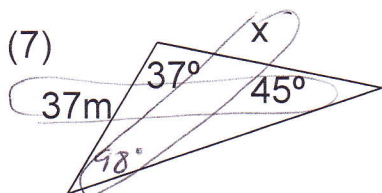
(5)

Method: PythagoreanFormula: $x^2 = 4.7^2 + 5.3^2$

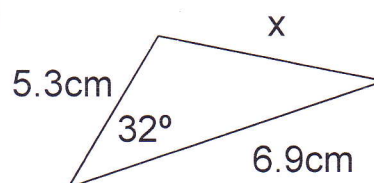
(6)

Method: sine lawFormula: $\frac{x}{\sin 37^\circ} = \frac{37}{\sin 45^\circ}$

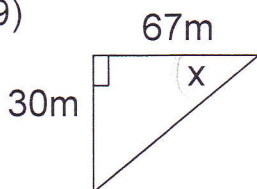
(7)

Method: Sine lawFormula: $\frac{x}{\sin 98^\circ} = \frac{37}{\sin 45^\circ}$

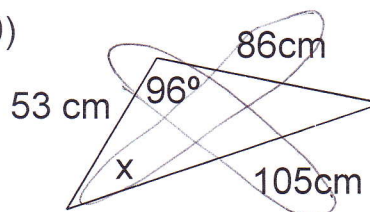
(8)

Method: cosine lawFormula: $x^2 = 5.3^2 + 6.9^2 - 2(5.3)(6.9) \cos 32^\circ$

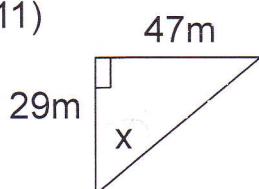
(9)

Method: trig ratio - TOAFormula: $\tan x = \frac{30}{67}$

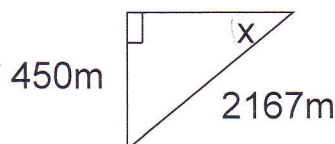
(10)

Method: sine lawFormula: $\frac{\sin x}{86} = \frac{\sin 96^\circ}{105}$

(11)

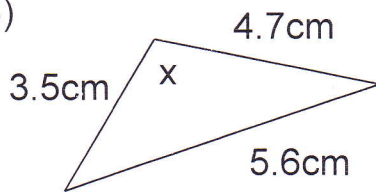
Method: trig ratio - TOAFormula: $\tan x = \frac{47}{29}$

(12)

Method: trig ratio - SOHFormula: $\sin x = \frac{450}{2167}$

$$\cos X = \frac{3.5^2 + 4.7^2 - 5.6^2}{2(3.5)(4.7)}$$

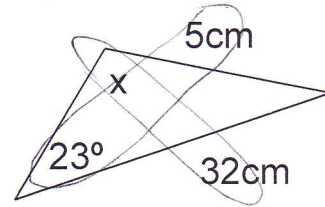
(13)



Method: cosine law

Formula: _____

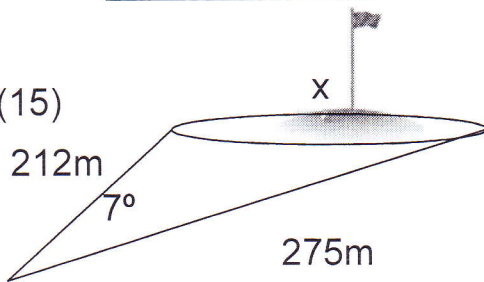
(14)



Method: sine law $\frac{\sin X}{32} = \frac{\sin 23^\circ}{5}$

Formula: _____

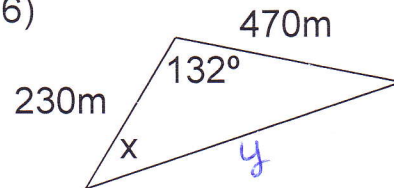
(15)



Method: cosine law

Formula: $X^2 = 212^2 + 275^2 - 2(212)(275)\cos 7^\circ$

(16)

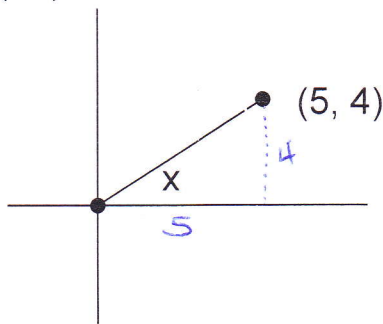


Method: cosine law & sine law

Formula: $Y^2 = 470^2 + 230^2 - 2(470)(230)\cos 132^\circ$

$$\frac{Y}{\sin 132^\circ} = \frac{470}{\sin X}$$

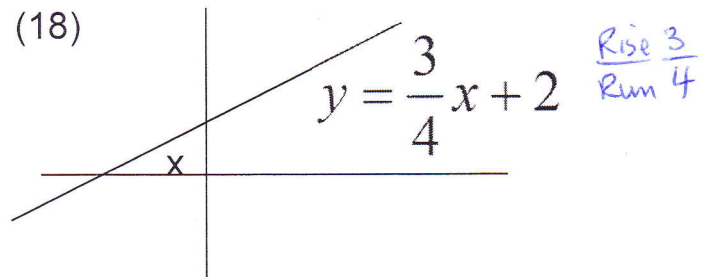
(17)



Method: trig ratio - TOA

Formula: $\tan X = \frac{4}{5}$

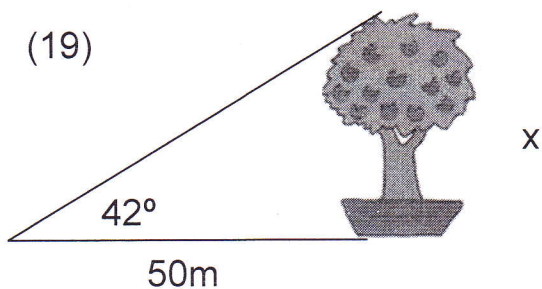
(18)



Method: trig ratio - TOA

Formula: $\tan X = \frac{3}{4}$

(19)

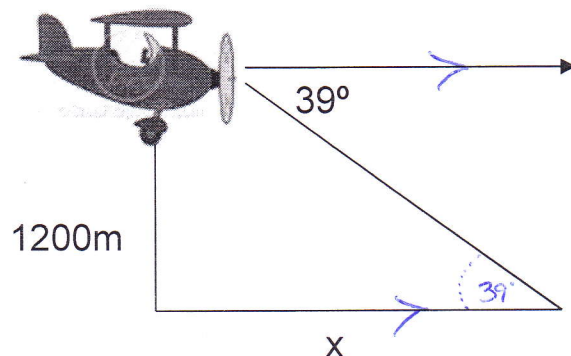


Method: trig ratio - TOA

Formula: _____

$$\tan 42^\circ = \frac{X}{50}$$

(20)



Method: trig ratio - TOA

Formula: _____

$$\tan 39^\circ = \frac{1200}{X}$$